FACTSHEET

Veterinary Services

United States Department of Agriculture

Animal and Plant Health Inspection Service

September 1999

Chronic Wasting Disease

Chronic wasting disease (CWD) is a transmissible spongiform encephalopathy (TSE) of deer and elk that has occurred only in limited areas in the Western United States. First recognized as a clinical syndrome in 1967, it is typified by chronic weight loss leading to death. There is no known relationship between CWD and any other spongiform encephalopathy of animals or people.

CWD has occurred in animals at one captive wildlife research facility in northern Colorado and one in southeastern Wyoming. Although cases of CWD have been seen in two zoological parks more than 10 years ago, the affected animals all originated from the research facilities in the above-mentioned areas. Soon after diagnosis of the disease as a TSE, Colorado and Wyoming wildlife management agencies stopped the movement of deer and elk from these facilities. CWD has been confirmed in free-ranging deer and elk in a limited number of counties in northeastern Colorado and southeastern Wyoming. CWD has also been diagnosed in several farmed elk herds in South Dakota, one in Nebraska, and one in Oklahoma.

Species that have been affected with CWD are Rocky Mountain elk, mule deer, white-tailed deer, and black-tailed deer. Other ruminant species, including wild ruminants and domestic cattle, sheep, and goats, have been housed in wildlife facilities in direct or indirect contact with CWD-affected deer and elk. No cases of CWD or other TSE's have been detected in these other ruminant species. There is ongoing research to further explore this possibility.

Clinical Signs

Most cases of CWD occur in adult animals. The disease is progressive and always fatal. The most obvious and consistent clinical sign of CWD is weight loss over time. Behavioral changes also occur in the majority of cases, including decreased interactions with other animals in the pen, listlessness, lowering of the head, blank facial expression, and repetitive walking in set patterns within the pen. In elk, behavioral changes may also include hyperexcitability and nervousness. Affected animals continue to eat grain but may show decreased interest in hay. Excessive salivation and grinding of the teeth are seen. Most deer show increased drinking and urination.

Diagnosis

Research is being conducted to develop live-animal diagnostic tests for CWD. Currently, definitive diagnosis is based on necropsy examination and testing. Gross lesions seen at necropsy reflect the clinical signs of CWD, primarily emaciation and aspiration pneumonia, which may be the cause of death. On microscopic examination, lesions of CWD in the central nervous system resemble those of other spongiform encephalopathies. In addition, using a technique called immunohistochemistry, scientists test brain tissues for the presence of the protease-resistant prion protein.

Epidemiology

The origin and mode of transmission of CWD is unknown. Animals born in captivity and those born in the wild have been affected with the disease. Based on epidemiology of the disease, transmission is thought to be lateral and possibly maternal. Transmission by feed is not believed to occur as affected animals have been fed a wide variety of feedstuffs.

Colorado and Wyoming wildlife management agencies are continuing to invest resources in CWD research efforts. In addition, the Colorado Division of Wildlife is currently developing a management plan for CWD in free-ranging cervids. These agencies are committed to limiting the distribution of the disease to the current localized area and decreasing its occurrence in the deer and elk population.

Surveillance

Surveillance for CWD in Colorado and Wyoming has been ongoing since 1983, and to date, has confirmed the limits of the endemic areas in those States. An extensive nationwide surveillance effort was started in 1997–98 to better define the geographic distribution of CWD. This surveillance effort is a two-pronged approach consisting of hunter-harvest cervid surveys conducted in Arizona, Colorado, Idaho, Kansas, Michigan, Montana, Nebraska, Nevada, New Jersey, South Dakota, Utah, and Wyoming, as well as surveillance throughout the entire country targeting deer and elk exhibiting clinical signs suggestive of CWD.

In the free-ranging population, from over 5,000 samples examined, there have been approximately 110 clinically affected deer and elk identified over the last 10 years. The majority of those affected were mule deer. Again, there have been no free-ranging animals found to be positive that did not originate from the endemic areas.

Additional Information

For more information about CWD, contact

Michael Miller
Colorado Division of Wildlife
317 West Prospect Road
Fort Collins, CO 80526
Telephone: (970) 472–4300

Dr. Tom Thorne
Wyoming Game and Fish Department
5400 Bishop Boulevard
Cheyenne, WY 82006
Telephone: (307) 777–4586

Dr. Elizabeth Williams
Department of Veterinary Science
University of Wyoming
Laramie, WY 83070
Telephone: (307) 742–6638

The U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) has provided assistance to State officials in diagnosing CWD and in monitoring international and interstate movements of animals to help prevent further spread of CWD.

For more information from APHIS, contact

USDA, APHIS, Veterinary Services
National Animal Health Programs
4700 River Road, Unit 43
Riverdale, MD 20737–1231
Telephone: (301) 734–6954

Current information on animal diseases and suspected outbreaks is also available on the Internet. Point your Web browser to http://www.aphis.usda.gov to reach the APHIS home page.